

Jennette  
1901



1426 K&T

23

is.  
our  
e  
Mill

Covered  
tion

dia  
m

and time

attributing.

St. Lawrence River  
Wells

If found, send by mail to  
Prof. Foerste  
Grand Ave.  
Dayton, Ohio.



L. V. Sevier. Nashville Tenn.  
State Ag. Dept. knows Indian, Hardin,  
and Hone Creeks and would like to  
go along.

Col. Jim Smith, at present of the  
John C. G. Co. 9 mi. from  
Savannah.

June - 1901.

Savannah - Horse Creek section.

1. Watson's Mill. about 3 mi. from  
Savannah, about 6 mi. above  
mouth of Horse Creek. = Paulk's Mill  
On Savannah & Clifton road.

6 ft + clay layers with some  
limestone above in the clay. Covered  
by soil + top of this clayey section  
not seen.

white rock.

5 1/2 ft good bluish quarry stone,  
like Lenoir of Indiana in appear-  
ance. Contains:

*Dalmanites verrucosus*, pygidia  
common, heads less common.  
*Iliaenus ixoxus*, collected.

3 ft. clay blue above, red below  
with *Retzia*, *Rhynchonella* *in-*  
*dianensis*. collected.

red rock section.

15 in. red limestone, weathering  
readily.

6 ft. red clayey rock weathering to  
a clay. 6 ft. section ends at  
stream level.

A quarter of a mile down the creek, at  
a cave the following rocks are seen:  
3 1/2 ft. rock, more white, like quarried  
stone at Paulk's Mill.

1 ft. shaly stuff.

34 ft. red clayey, and hard lime-  
stone alternating.



2. Turkey creek empties into Horse creek  $\frac{1}{4}$  mi. above Watson's mill and shows upper part of section very poorly near mouth.
3. Iron bridge across Horse creek,  $\frac{1}{4}$  mi. above Watson's Mill. About 25 ft. of rock, white, some of it quarried, belongs to bottom of Silurian section. Below the red rock series. Coffee sand rests directly on top.
4. Lick Ford, at mouth of Willoughby creek,  $\frac{1}{2}$  mi. above a bridge across Horse creek.

Ordinary Willoughby cement rock at Ford.

5. Eastward, up Willoughby's creek as far as road past school house, the ordinary Ordovician cement rock lines the creek. In places it is 15 feet high. Covered by Coffee sand.
6. Welch's Mill. = Maddox mill = Old Graham Mill. About 2 mi. above Willoughby's creek. 5 mi. SE of Savannah. Coffee sand with silicified tree trunk at base; on 23 ft. white limestone above, blue below. 2-7 ft. of a rock which may be Clinton. It is hard and flinty. 15 ft. Ordovician cement rock like

the cement rock at Willoughby and Clifton.

The white rock first mentioned is cracked at different levels. It seems to belong below the red clayey rocks of other sections according to this section. I visited this section with T. B. Kerr of Savannah.

7. Dodd's Mill. about  $\frac{1}{4}$  mi. above Welch's Mill. No Ordovician seen. Coffee sand on 38 ft. of white limestone like that at base of Silurian at Welch's Mill.

See Ross.

8. Sulphur Spring, on Ross + Arnold's place, about a mile above Dodd's Mill, a little N. of the Florence road.

Coffee sand above.

- A = 4 in limestone  
 3 ft. white clay with fossils in thin limestone shivers.  
 35 ft. red rock clayey.  
 5 ft. white rock like rock at Dodd's Mill. This completes section to creek level.

above A, up branch at spring, is more white rock, at least 12 feet. There is an upper & a lower white section with red between.



9. Calybeate Spring,  $\frac{1}{2}$  mi. above Sulphur Spring, on east side of Horse creek.

A short distance down the river from the spring are 15 ft of white limestone, = top of Silurian. This is overlaid by at least 60 ft. of Lower Helderberg, containing large round crinoidal bodies though their whole extent apparently. Small fossils (Lower Helderberg?) occur just above the Silurian limestone.

10. SE of Mr. Cab. Blount's Home, 2 miles above Calybeate spring, along Horse creek. The top of the Lower Helderberg contains the large round crinoidal bodies. There is a trace of Black shale, not well exposed, and the Waverly is abundantly exposed.

Cerro Gordo - Saltillo.

11. Cave Spring, on road from Saltillo to Cerro Gordo,  $\frac{1}{4}$  mi. E. of Cerro Gordo.

A little whitish clay, resting on 35 ft. red rock, clayey at least. 28 ft. white limestone below.

12. Cerro Gordo.

Brown sand and gravel (chiefly the latter) = Coffee sand?  
 8  $\frac{1}{2}$  ft. very fossiliferous clay with limestone shivers.  
 5  $\frac{1}{2}$  ft. fossil. limest. very fossilif.  
 3 ft 9 in. clayey limest. " "  
 2 ft 4 in. more clay  
 4 in. limestone } Merizcus horizon.  
 3  $\frac{1}{3}$  ft. white clay } fossiliferous

23  $\frac{3}{4}$  ft.

2 ft. massive indurated clay bed as at Rice Mill

26 ft. red rock, becoming more clayey at top, but turning to red and fairly solid more whitish limestone below.

32  $\frac{1}{2}$  feet white rock.

10 feet not exposed on account of high water.

13. Saltillo

1 mile S. of town, on Miles creek, at site of old mill,  $\frac{1}{4}$  mi. west of river is abundant Ordovician co-



ment rock, like that at Clifton,  
It slopes strongly eastward, and  
at the river, there occurs plenty of  
white limestone with a little  
red intercalated at base, which  
is probably partly Roemer's bed.

at the Landing, a well 50 feet  
deep struck plenty of Black slate,  
and apparently some rotten  
phosphate rock, depths unknown.

1 mi. N. of town at another old  
mine site, only whitish limestone  
like that along the river ~~above~~ the  
mouth of Miles creek, is seen.

R. S. Dany, Saltillo, has vis all  
about Shannonville blades.  
J. S. Holland went along with  
Dany on Saltillo visit.

# Clifton and Glenbirk.

14-

15-

At and below Landing. Clifton.

Back of  
town  
hotel.

Glenbirk.

above this  
all weath-  
ered red.

white cracks  
bed with  
purple, near-  
ly red clay-  
ey layers  
at base  
ternals 22

solid  
purplish 3 1/2  
white 2 1/2  
cracked 2  
4 1/2

solid  
purplish 12  
ft

B 2 1/2

Cogwood 14

Clinton 1

2 Roemer's  
2 wh. clay  
soft red  
clayey  
shale  
16 1/2 ft.  
red shaly  
stuff with  
some hard-  
ey layer +  
limestone  
15 1/2 ft.  
soft red  
shaly rock.  
estimated on  
12 1/2 slant  
44 1/2

18 ft.  
white  
cracked  
limestone  
estimated 12 1/2

solid l. 3 1/2  
measured 3  
15

21 1/2

3

12

36

3 3/4

Roemer's  
2 wh. clay  
red clayey  
concret  
lign-  
stone  
22 1/2  
limestone  
mottled and  
solid  
21 1/2

lowest red  
2 layer, clay

12 1/2 lime-  
stone

3 1/2 hard l.  
1 1/2 soft red clay  
1 1/2 hard l. of  
soft

Fairly  
solid  
faucal  
limestone

21 1/2

more solid  
shelving  
soft red l.  
Cogwood

12

3 3/4 Clinton

40 1/2



At Clifton Landing, the Clinton  
is underlain by 16½ ft.  
16½ ft. of Cin. Group and shale  
2.2 ft. of ~~concretionary~~ c. limestone

A Roemer's bed at Clifton.

*Astylospangia praemorsa*.  
stellatum-sulcata  
incisv. lobata  
imbricatv-articulata

*Palaeonurus cratera*

*Astraeospangia meniscus*

*Favosites fava* as figured by R.

*Favosites Gathlandica*, Fig 11.

" *discoidea*.

" *fibrata*

*Heliodites interstincta*.

*Thecostegites hemisphaerius*

*Cyathophyllosum Shumardi*.

*Pentostella anticostata*.

*Caryocrinus ornatus*

*Platycrinus Tennesseensis*

*Saccocrinus speciosus*

*Cystocrinus Tennesseensis*

*Orthis elegantula*

*fissiplica*

*biloba*

*Leptaena reambridalis*

*Spirifer oligoptycha*.

*Atrypa reticularis*

*marginalis*

A cont.

*Wilsonia Wilsoni*.

*Pentamerus galeatus* young

*Calceola Tennesseensis*

*Platystrophia Niagarensis*

*Calymene Niagarensis*

*Sphaerexochus minor*

*Maeris barriensis*

Also

*Spirifer foggi*, Peggam type

*Spirifer simplex*, very small  
as at Bledsoe.

*Spirifer* becoming simple  
towards margin.

*Strophomena* long hinge line,  
small form, under arm.

*Orthis*, new species of Hall  
from Tennessee.

*Encrinurus*

*Alveolites* large openings.

*Heliodites subtrilobatus*

*Pachydictya* same as at  
Peggam.

*Petraria Wayneensis*.

*Petraria Fanningana*.

*Cyrtia arcata*, not arched

*Spirorbis*

*Calymene elegantula*.



A. at Glenkirk. (Not found)  
(at Clifton)

*Dalmanella caudata*,  
*Atyris tumida*  
*Lampterocrinus Tennesseeensis*  
*Callipora elegantula*  
*Thracia Swindemana*  
*Rhynchonella Tennesseeensis*  
*Cladopora flexilis*  
*Plasmopora*.

B. Base of Laurel. Top of Osgood  
at Clifton.

*Stephanocrinus Osgoodensis*  
*Pisocrinus gemmiferus*.  
Superb top of *Stephanocrinus*.

C. Crinoidal bed in Osgood, Clifton.  
*Lituites*. Very common.  
*Hyolithes*  
*Illacrus* common  
*Cyclonema* "  
*Arturoceras* very "  
*Platyceras*.

*Pisocrinus* & *Stephanocrinus*  
are found within 2 ft. of Clinton  
in the Osgood.

*Atrypa reticularis* in Osgood.  
*Coryocrinus* found within 2  
ft. of top of Osgood.

D. Clinton at Clifton.  
*Platystrophia bifurcata* small  
*Artus elegantula*  
*Atrypa marginalis*  
*Atrypa Clintoni* corrugate form.  
*Plectambonites sericea*  
*Triplex Clintoni*  
*Cyclonema bilix*  
*Illacrus Daytonensis*  
*Favosites favosa*  
*Halysites catenulatus*  
Included from Ard-  
vician at base =  
*Rhynchonella capax*  
*Artus subquadrata*.

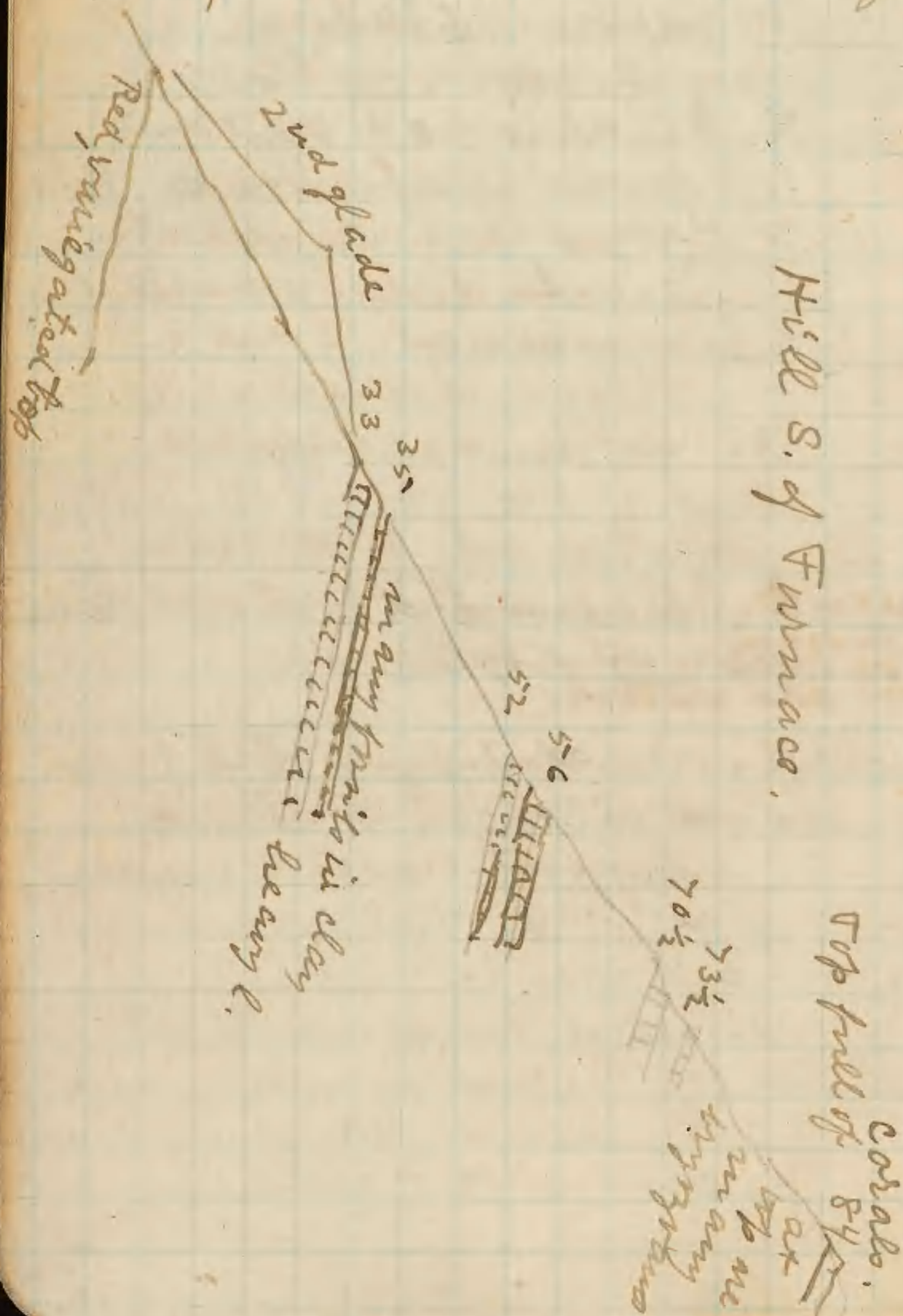
D. Clinton at Glenkirk.  
Tinged with salmon brown  
or more light brown and whitish.  
*Illacrus Daytonensis*  
*glabella*.

Ardvician just below  
Clinton at Glenkirk.  
*Rhynchonella capax*.



# Brownport Furnace,

16. S. of Brownport Furnace, *Orthis ceras ameyensis* occurs in red series, 15 feet below base of Roemer's bed, at 2nd glade.



17. On road from Vices stone to Furnace, the large round Favosites new species, occurs 33 feet above the variegated red bed.

18. at Mound Glade along road from Vices to Perryville, it is 50 1/2 feet from top of the red rock to the top of the very crinoidal layer with *Pentrematites Reinwardtii*.

19. at Mound Glade off the road. It is 63 feet from bottom of creek to very fossiliferous bed, and 93 1/2 feet to top of hill.

The Furnace at the Landing was erected in 1839-40. The Furnace at Brownport Furnace was put up in 1849. Therefore after Roemer's visit.

Mrs. Hettie Fisher Decaturville  
Mrs. Ellen Allen Decaturville  
Mrs. Anna K Mc Miller Between Decaturville & Buckner's Mill.  
at Elie Fisher's mi. S. of Sulphur Spgs.  
Knows all about Roemer's visit.



Perryville.

Photo. Mrs. Mary Young.  
Perryville. Tenn.

Judge Head of Chicago.  
Head of Double Sisters Island  
to Shannsville. Or. B. B., in  
west side of river.

20. Perry, NW. corner of town,  
Sandstone at fence level.  
1 1/2 ft Thin limestone full of  
bryozoa and other Lower  
Helderberg fossils.  
14 2/3 ft. Weathered to richly  
fossiliferous clay.  
16 ft. { 2 ft. fine grained blue limest.  
3 1/2 ft. At top is *Encalyptocrinus*  
but flatter, also flat  
*Strophonella corrugata*,  
rest of section not recorded.  
2 ft 3 in. Crinoidal rock.  
6 in. *Coccidium* layer  
2 ft 10 in. Top of layer full of  
*Orthis oblata*?  
*Encalyptocrinus crassus* at  
top.  
4 1/2 ft. Roemer's bed. Coarsely  
crinoidal for 1 ft. at top.

Perryville + Linden.

21. Perryville. Quarry. NE of town.

Soft layers partly exposed,  
11 1/2 ft. softer than rock below  
full of fossils.  
10 1/2 ft. solid crinoidal rock  
*Astracosporgia muricatus*.

22. Linden, 1 mi. N. of  
Mr. William H. Patton.

6 1/2 ft. Black Shale  
1 ft. sandstone.  
19 1/2 { 6 1/2 ft. not exposed  
7 2/3 ft. more shaly beds very fossiliferous  
5 1/3 ft. solid limest. massive.  
Roemer's bed. 17 1/2 ft.  
Spring at house.

Near lower end of stream the top  
of Roemer's bed is 52 ft above  
the stream bed. and contains  
*Astracosporgia muricatus* at  
top. Collected. Also *stellatim-*  
*sulcata*.

Chas. Timm. Culp. Tenn.  
wants Photo. of derrick.



23. East of William Bodwin's house. on hill side. Opposite road leading from Short creek into Corn creek road.

Black shale.

18 in. sandstones

88 ft. Roemer's bed.

*Conchidium myosino?* within 10 feet of base of section.

24. Up Corn Creek. 1 mi. above mouth of creek. Above John M. Bodwin's house. At spring on S. side of creek. at foot of bluff.

Black shale

13 ft. dark blue carb. sandstone.

1 ft. Black shale.

1 3/4 ft. sandstone.

72 ft. Roemer's bed.

25.

- 26) 1 mi. E. of Linden. Up Short creek. N. m. road side. 1/4 mi. W. of J. S. Journey's house.

Black shale

2 ft sandstone

11 ft. Lower Helderberg.

Roemer's bed.

- 27) 1 1/4 mi. E. of Linden. Up Short Creek. At forks where Jack's Branch comes in from SE and up that branch. Near E. Duncan's house. (tenant)

3 in. Blue sandy rock.

2 ft. Black shale

2 ft. sandstone

18 ft. Roemer's bed.

18 1/2 ft. Abundant corals.

Bottom of section at spring on Short creek.

- 28) Webb's Mill. 1 1/2 mi. S. of Linden. - Rise Mill.

Nodular layer.

4 1/2 ft. Black shale.

2 ft sandstone.

85 1/4 ft Roemer's bed.

11 ft. reddish rock - variegated bed.



28 Cont.

*Astraspargia ensuizans*  
is found 16 ft. above top of  
red rock, above a 5 ft. in-  
durated clay layer. Massive  
looking but spalling off ir-  
regularly.

Cumberland City.

29 - Along R.R. West of John  
Broadus house, 3 mi. S. of  
town. Just N. of crossing  
of main county road  
to Erin.

In ascending order, going  
S. towards the crossing.

In a cut is a thick section  
of the cement rock of Clifton =  
Ordovician: badly decayed  
and mostly reduced to shaly  
stuff here but better preserved  
at one point along the R.R.  
about 2 mi. from town.

22 ft. White limestone, Clin-  
ton, like Dayton limestone.  
Upper 12 ft with chert layers.  
Lower 10 ft massive. Fa-  
vorites favosus in massive  
part.

14 ft. Soft red clayey rock =  
As good, more whitish at base.  
Thickness may be 19 feet  
but there is probably a  
faulting here.

7 ft. Red li. m. with *Stroph. cravri-*  
*nus* *Esquerdensis* + *Pisocrinus*  
*gemmaformis* becoming less  
red + clayey above.



- 2 ft. limestone, slightly crinoidal  
 3 ft. reddish clay. May be thicker  
 if not faulted.

White + much cracked rock  
 like some of the Roemer lime-  
 stones and some of Laurel  
 also.

The rock runs along road at  
 John Bradus in an E + W  
 direction.

Farther S. is Niagara (Lans-  
 ville?) overlaid by Lower Hel-  
 derberg (fossils) and still far-  
 ther S. is Siliceous Group.

Black Shale not exposed here.

- 30) East of angle of Public road  
 to Erin, E of John Bradus'  
 house.

Black Shale is seen up a  
 gulley on the N. side of the little  
 stream flowing westward  
 and passing just S of John  
 Bradus's house.

Lower Helderberg fossils, thin  
 section, as at RR cut.

- 169 ft. limestone. Astraspungia  
 meniscus near base. Very  
 flat Favosites favosus about  
 3/3 way up. Faulting may

have increased the section  
 here.

- 20 ft not exposed.

- 32 ft. clayey red rock. pretty  
 well exposed. ~~Massive~~

- ? Massive red limestone,  
 dense, and red, like some  
 below the red layers at  
 Clifton, but red instead of  
 light red. Bone not exposed  
 here.

31. Christopher Schmidt. At old  
 Furnace on SW edge of basin.  
 Black shale. also limestone  
 exposures. The latter contain  
 peculiar fossils. Faulting  
 in here.

32. Dr. W. B. Scott. On western  
 edge of basin, at about the  
 middle of its length. Here the  
 various sponges were found in  
 the regular Roemer beds. These  
 overly soft red clayey rocks  
 and hard massive limestone,  
 verifying the John Bradus  
 section. Below the red mas-  
 sive rock, south of the house,  
 is the Oriskany with the *Perv-*  
*crinus* + *Stephanocrinus*.



32 cont.

33. West of town, along the river,  
Black shale is exposed.  
The Lower Helderberg shows  
numerous fossils!  
The massive red rock be-  
low the red clayey section  
is faulted up against  
the Lower Helderberg here.

Rushings Creek. 8 mi. S. from  
Big Sandy Station. On Brick  
+ horse farm.

Bluff limestone, 15 ft. with  
plenty of fossils. (Lower Helderberg?)

250 yds. E of house on creek.

Road runs by a stable to the bluff.  
Reported as above by a farmer. Not  
seen by me.



## Stop —

- \* Lobelville. N. Perry Co. 4-5 stores.  
Look up A. W. Dodson for board.
- \* Beardstown, 7 mi. S. 3 stores,  
Bill Edwards.
- \* Farmers Valley, Good Bluff, John Wiley
- \* Flat Woods, Dr. John Haggard.
- \* Forty eight.

## Tennessee River.

Waterloo. Hotel  $\frac{1}{2}$  mi. from river.  
 Riverton Hotel  $\frac{1}{2}$  mi. from river.  
 Eastport Mr. Walker. 1 mi. off fr. river.  
 Booker Woods on west side. The  
 Red Sulphur Springs Hotel is 3 mi.  
 off.  
 Pickwick. The  
 White Sulphur Springs Hotel is  
 1 mi. from landing. Seamen  
 comes Sept. 15.  
 Hamburg. Poorest place in the  
 world. Bed bug hotel.  
 Pittsburg Landing. Store. Boarding  
 house. Mrs. Chambers.  
 Crumps. Right up in the hill  
 from landing is dwelling house  
 Mr. Linder.  
 Savannah Hotel.  
 Coffee Landing. Good place.  
 Big store.

Digges on West side. Can stay.  
 Cerrro Bordo. Two stores. Mr. Weller  
 is best.

Mr. Martin.  $\frac{1}{2}$  mi. beyond Bath  
 Springs. Near the 5 mi. post  
 turn to the left.

Linden.  $\frac{1}{2}$  dollar ferry, if rig is used.  
 Telephone to Linden for rig and  
 state if you have trunk.

Perryville Good hotel.

Wells. Store. Can stay.

- o Brainerd. No stopping place.
- + New Era Store + 3 dwelling house.  
 Lego. Dr. Strickland.  
 Peters. Store. Sick. Duke N. Blackwell.  
 Bobs. W. side. Store. Can stay.

Bluffs for 2 mi. down river.  
 Waller Bluff. Store. Can stay over  
 night.

Daltier. Mrs. Clark #2.00

Clifton. Squire Haggard. Visited by  
 Head and Harris.

Johnsonville to Birdsing Creek.  
 Mouth of Big Sandy. Good. Mr.  
 Buckingham.



Mrs. Milligan, great collector of Tennessee Niagara fossils lives at Jacksville, Illinois, about 20 mi. west of Springfield.

Ordovician exposures occur on Horse, Indian, Hardin + Beechcreeks  
xxx On upper part of Beech creek, not more than 4 mi. from Waynesboro is a patch of it and others are met with in the same stream on going towards its mouth.

Clifton 15 ft. calcareous shale.  
23 ft blue limestone.  
: Rhynch. capax  
: dentata  
: Column. stellata  
70 ft. Artus bed. smooth flags and clay.

Variiegated bed.

Quarries on Big Sandy, at local dome. Southern Henry Co  
Birdsey creek Benton Co

Lower Helderberg.

White Sulphur Spgs. S. Hardin Co.  
Commencing at mouth of Big Sandy up stream for 5 or 6 mi. in Henry Co.  
S. Benton + in Decatur.  
30 ft at Beardstown, or rather 3 mi. below it. betw. Black Shale + Meris co beds seen.  
2 mi. above mouth of Buffalo.



- 839 Williams Mill, 5 mi. above mouth of Big Sandy, Henry Co. 50 feet. cherty beds with fossils: Crickamy?
- 840 Tributary of Birdsong, S Benton Co. like last. = Crickamy? also?
- 841 White Sulphur Spgs. establishment on upper Held. chert with fossils. About 1 mi. from Spgs. on oppo- site side is bluff 2 mi. long, with Lmr. Held. at base. Cherty beds = Crickamy?
842. Buffalo River, Perry Co.
843. Nix
- 844 A B G out. Indian Creek, 14 mi. from Wagnersboro, 22 ft. Sava- nah. Silicified fossils, 10 ft. Hill.
845. Craven's Mills a short distance below Gauto & Helder. 35. Menis- cus, top forms a ledge at Craven's Mills. 65 ft. of limestone with Meniscus. 20 ft variegated, also well seen at Craven's.
- 846 2 1/2 mi. W. of Gauto, bed, 25 ft, filled with corals.
847. Hardin Co. Col. Smith. 9 mi. from Savannah, on Wagnersboro road, 20 ft bed. tecumary,
- 848 Bath Spgs. Secatur, 20 ft bed fossils. Meniscus below.

- 29 N of RR bridge N of Riverside Tenn. At base of Laurel = 1 1/2 mi. N of Gallatin Creek. Holozytites, 4 in. long, species unknown. Pterocrinus gemmiformis, common, Orthoceras, large forms.
- 29a Waverly with cherty layers. 11 ft + 8" sandstone, brown, ranges of fish run over the surface. Pteroplastic nodules along the base, some of them 4 in. long.
- 8" siliceous, cherty stone, occupying portion of block shade eastward. A new idea for me.
- 8" Nix. l. badly weathered, crumbled to a clayey limestone mass.
- 50 Waverly limestone traces of roots.
- 10 10" clay.
- 6" white limestone, soft, crumbling, with little silica.
- 10 2" covered. Probably clay.
- 36 3" limestone. Strongly reddened in some of the layers. Among others at the very top. The upper half more massive. The lower half softer & weathering back.
- 40 As good? Bedded in rather thin courses, with a few thicker courses at the base. At the top is a soft clay. Would be conformity between this a bed above = Laurel.



- 5° 9" Crossbedded Clinton, at present  
very ferruginous in places.  
5° 9" Greenish Ordovician clay ac-  
tually exposed.

Clinton at top with  
*Favosites favosus*? flat with  
corallites 3 mm. across.  
*Habysites catenulatus*  
*Blasius ambignus* type, (Agardh type)

3D Ordovician W. of Harvards on road  
to Trace creek, N of Buffalo river.

14½° Clay

- { 8° weathered clay limestone. No fossils  
at least none common.  
11° Fossiliferous weathered clay rock.  
Fossils chiefly in upper half.

32 Mr. Ed. Walker — on Tucker Branch  
road.  
Wavely.

- 5° 3" sandstone, greenish. = Wavely  
8" brownish finegrained rock full of  
phosphate nodules, up to 7" long.  
1° Black shale  
4" Sandstone.  
1° 8" Dark shaly finegrained rock  
with *Glyptotheca subspatula*. Takes the  
place of the phosphate rock at base  
of section at Pegram bridge.

Farther down the road at a spring & farther  
Sandstone = Wavely & phosphate nodules.

Black Shale

1° 8" Shaly rock.

7° Finegrained sandy rock. This  
can hardly be Silurian. It does  
not show evidences of layering.

3° 8" clay.

10° 8" clay rock spalling.

B 5° 9" calcareous clay & fossils.

5° 6" limestone, upper part is a shaly lime-  
stone.

3° covered

3° limestone.

B = *Favosites Forbesi*, *Pisocrinus Cliftoni*  
pentagonal type. The Roemer bryozoan, *Lecan-  
ophoria* a disc shaped.



- Waverly No 2 sandstone. <sup>Carter Cr.</sup>
- 1° Black sandy mass. } = Black shale level.  
 2° 6" dark rock. sandy }  
 1° More shaly } = rock below  
 3° dark rock, sandy } Black shale level

No phosphate nodules or genuine black shale seen.

- 34) At Old Mill. Mill Creek  
 waverly.  
 6" Sandstone like below, phosphatic sand. = 2 in.  
 No Black Sh.  
 5° 2" Sandstone = belongs below Black Sh.  
 at top of Niagara. The corals  
 hemispheric, Bykidula Roemer?  
 44° 4" Limestone. Much of it soft. I  
 could not with certainty identify  
 any of it as variegated. Too  
 white and not solid enough at top.

Just below mouth of Mill Creek is  
 bluff 75 feet high. Too steep to  
 climb except at ends. Not  
 visited.

The brown sandstone layer belong-  
 ing below the Black Shale is exposed  
 from 1 mi above the mouth of  
 Owl Creek along the valley of Big  
 Cyprian Creek as far as the Buffalo  
 River. Up Owl Creek it is fol-  
 lowed 1/2 mi. to a small water  
 fall. Silurian section does not

exceed 20 feet along these valleys.  
 Only Roemer bed seen.

- 35) On road N of Buffalo between  
 Big Cyprian + Hope Creeks.

Sandy rock belonging below Black Sh.

- 25° Silurian section with  
 Astrasporgia meniscus  
 Thecostegites hemisphericus  
 Artus, with long ventral brach.  
 elegantula species, var. of this.  
 Omphyma elegant.  
 Streptelasma large borealis.  
 Pterocrinus gemmiformis large  
 Amplexus Shumardi small.

- 36) W. of Dr. Evans. 1/2 mi.

Waverly  
 1 foot greenish ss with plenty of  
 phosphatic nodules.  
 about 7 feet of ss belonging below  
 the black shale.  
 Silurian. Roemer's beds.



37) at Mouth of Little Apperson, NW of  
Flat Woods.


Waverly.

Nodules, (phosphatic) in sandstone.

9° 6" Sandy rock takes place of Black  
Shale.

Silurian with *Olenia* major at top.

12° below *Astracampylus meniscus*

9° below top - Coral with flat back 

Total Silurian section exposed  
is 48° above Buffalo River.

Waverly

2 ft 2 in chiefly shaly, phosph. nod. in upper 4"

7 ft solid massive S.S.,

Silurian

No Lower Helderberg.

W. F. Pate, Versailles, stayed with  
J. C. Whitaker, Lives NW of Flat  
Woods on road to Buffalo.

*Palaeomagan ratera* found by  
Mr. Whitaker in Tate Haller,  
50 yds from place where road  
forks going N. Still's side from  
Buffalo river.

31 = 8) Ezekial Cothran. E of house is bluff  
Waverly. 2 mi SW of Trace Creek.

9° Sandstone. Nodule layer at top.

4° Clay rock spalling. See section 32.

60½° Limestone rock down to where the  
house is covered by waters of the  
Buffalo river.

36° Above the Buffalo river there is  
a bed that weathers away back.  
It is a soft limestone. The variegated  
bed delays below this  
level I think.

Petrified Tree. Pinhook Hill - Grave  
yard. Between Rutherford and Horse  
Creek. This place is called Lutts  
Post Office. Tree is found in road  
beyond the post office going towards  
Waterloo.

Petrified Tree. 7 mi. N of Cypress  
Spr., on head waters of Weather-  
fork Fork of Indian Creek. On  
one of the forks. On Jack Mar-  
tin's farm. In the hollow below his  
house in his field. NE of Whittington  
Stand? S. of Victory 5 mi.



- 2 1/2° Bandstone, phosph nodules in upper 6"  
 21 ft. White limestone. NW of Waynesboro 104  
 5 1/2° Covered 44 83  
 But at top with white crinoidal layers  
 22 1/2° Limestone, West of 7 clayey massive 77  
 16 1/2° Limestone white, well bedded, 54  
 10° Covered, probably white & soft. 38  
 12° 6" Limestone, white. Well bedded, 28  
 But distinctly bedded.  
 8° 5" Solid limestone. Rather massive 16  
 6° 6" Massive. Solid limestone 7  
 1° Iron stuff, see Clifton section at  
 the Clinton level.  
 25°-20° unknown. Ordov. clay? Doubtful thick 25  
 7° Leiper Creek bed, - Richmond,  
 Cement Rock, *Artus emacrat*

41) W.D. Helton. About 3 1/2 mi. NW  
 of Waynesboro on Beech Creek.  
 The Cement Rock runs off and  
 on as far as where Big and  
 Little Beech creeks come together.

42) Six miles W. of Waynesboro. About 1  
 mi. W. of Main Hardin Creek, up  
 Brewer Branch, where road to Martins  
 Mill crosses the branch & goes up  
 hill.

- Warily  
 5 1/2° Dark black shale  
 5 1/2° Covered. Iron part brownish stuff  
 11° SS. replacing Black Shale.  
 ? 20° Clay + limestone with *Thracia* & *giles* from  
 limestone in creek bottom

6 mi. from Martins Mill  
 Dr. E.R. Geiser E of house at road corner  
 About 200 yds N of Indian Creek.  
 8° 6" SS. replacing Black Shale  
 limestone full of small bryozoans.

W. of house.

with *Lingula subspatulata*.  
 5 1/2° Shaly stuff dark brownish black  
 9° SS replacing Black Shale  
 Clay & crumbling thin limestone  
 with *Astraeospira pumilus*,  
*Murchisonia Stricklandi*.



Free

D *Orthis fenestra praemorsa*, *stellatum* etc.  
*Merista tumida* way up. *Nitida*, *Saffordi*

C Thin crinoid rock.

Rhynch. *Saffordi*, *Meristella*, *teleyate* Rhynch.  
chondroid from as in *Walden*. *Leptocoelia*.

*Meristella* Rhynch. A little like *Dennissen*  
*ensis*, *Gypichula Roemeri* Rhynch. *neglecta*  
*Nucleospira*

B Fine grained limestone.

*Strophomena pulchra*, *Unicrinus Strick-*  
*landi*, Rhynch. *neglecta* *Nucleospira*,  
*Gypichula*

A Coarse grained limestone.

*Rhynchonella Saffordi*, *Calymene*.  
*Stroph. patenter* Rhynch. *Stricklandi*  
common. *Spirifer saffordi*? *Callispongia*  
*elegans* *Dalmanites* apparently with  
only an angle at top of tail. No spines.  
*Stroph. subpatenter* *Tricrinus aldis*  
*Stroph. encliticus* with very strong bend.  
*Stricklandi* from *Bolton*? *Dalmanites* long spine  
strong frontal perfect etc.

46)

NE end of Martin's Mill. (In Town.)

SS replacing Black shale.

(14° limestone, *Saffordi*, *nitida*, *tumida* D  
28° { 9° Bluish stone, trilobite, *tumida* to BCB  
5° Coarse SS, A  
57° Road to coarse sandstone. Roemer  
Base not seen here.

45)

across from Craven's Mill.

5° 10" SS. replacing Black Shale.

beds  
32° { 22° covered. Lower part bluish l. thin  
9° 10" Massive Coarse SS,  
55° Roemer bed.  
44° Variegated bed. Layer with lime-  
stone, but the reddish massive  
limestone.

→



- 47 1 mi. down from 2nd mile with
- 6° SS replacing Black Shale. At least 6°
  - 40° Northward, shaded, etc.
  - 6° 10° Limestone
  - 2 1/2° coarse SS.
- Remain

Just below the SS replacing Black Shale was found *Strophomena* in a lower position.

- 48) at school house E of Grant place at farthest point mapped, the Pseudo-Lowville coarse limestone & varying nodular limestone form a massive wall. The nodular limestone being more massive here. Beneath the Pseudo L. H. the rock recedes. The top of the Permian bed is also coarse grained and in places makes a vertical cliff with the overlying Pseudo L. H. &c.

Views recorded, 1. 2. 3.  
 At J. Herwin. Wharton Co. Tex. color.  
 Silley's Mills, on Horse Creek,  
 Hardin Co.  
 Head of gulch at base of head  
 Permian. Height of gulch higher  
 = recess between Permian & Pseudo  
 L. H. Massive = Pseudo L. H.

The limestone interbedded in the variegated clay weathers out variously as shown by View 4, W.D. McAnally  
 by McAnally, Clifton.



Clifton Landing.

- 6° Clay shale to base of Clinton  
 9½° Shaly beds. clay, upper 8 in. harder.  
 - near bed 20 or 25 ft.  
 capped. Stroph. like fossils and com.  
 + coarse lim. that follows with Rhynch.  
 6° More clay limestone. Some fairly hard  
 3° 6" to top of coarsest limestone.  
 9° 6" to lowest Strophomena filicosta? <sup>the</sup>  
 3° 4" Warren bed. <sup>the</sup> Photo 1.2. George  
 Pitts. Clifton Tenn. Colored.

at the lowest level Rhynchonella  
 capax was found at very base of  
 Richmond coarse limestone. above  
 about 4-6 inches of Warren bed. This bed  
 thin out upstream = W.

There is no conformity between Warren  
 bed + Trenton. The Warren rests on  
 rock 2 feet lower in the scale at  
 E end of landing than at W. end.

122 mi.	Johnsonville	10.49	Oliver.
	Keweenaw	12.49	2.04
	Keweenaw	2.53	
	Johnsonville	4.48	5.21
	Union City	7.52	
	Union City	1.13	
	Carroll	3.00	3.42
	Trenton	3.42	
	Trenton		
	Thelbes		Thelbes



Clifton sh.  $15\frac{1}{2}$  ft }  $34\frac{1}{2}$  ft Richmond.  
 c.l. 19 ft }  
 3  $\frac{1}{3}$  ft Warren  
 3 Louisa  
 Trace Creek sh.  $33\frac{1}{2}$  ft + Richmond  
 Waynesboro sh. 20-25 ft ? Rich.  
 c.l. 7 ft.  
 ? Louisa

~~Richmond~~ Clifton.

Lick fork, M. Murphy creek 15 ft + L.

Maddy mill L.

Saltville

Glenwood

Cumberland City

Centerville

Deppers Creek

Newton

Quarries of Variegated rock on Big Sandy  
 in southern part of Henry Co.  
 on Birdsung Creek in Barton Co.  
 on Duck River in Hickman Co.  
 on Cone Creek.

841. White Sulphur Springs. Establishment on Held.  
 Masses of chert with fossils abundant on surface.  
 Section opposite Springs = Hill above bluff  
 4) capped by sand + gravel = ferrug. conglomer.  
 3) Siliceous Gr. 75 ft.  
 2) Black Sh. represented by SS. with slaty seams 3 ft.  
 1) Bluish l. abounding in cherty nodules  
 and layers. All fossiliferous, with thick  
 bedded layers at top and base. 63 ft.  
 About a mile from the Springs on the  
 opposite side of the river is a bluff, 2 or  
 more miles in length, at the base of which  
 the Helderberg rocks are exposed. It may  
 be that the section above described is on this  
 bluff, opposite the Springs.

844. C) Near A.B. Grant. List of fossils.

845. Section A.B. Grant to Cravens Mills.

Grant bed described as Helderberg Limestone.

\*846.  $2\frac{1}{2}$  mi. W. of Grant, 10 feet below Black  
 shale is bed 25 ft thick well filled  
 with Niagara corals.

847. S) Col Smith, 9 miles from Savannah  
 on Waynesboro road. Fossils from  
 bed about 20 feet thick. (at Economy?)

848 D) Bath Springs, Fossil bed 20 ft. = Held.?  
 Ledge of hard l. 3 ft. thick.  
 Shaly limestone 18 ft. Meriscons,  
 variegated l. at bottom of hill.

{ White Sulphur Spgs hotel 1 mi. fr. landing.  
 at Pickwick.

{ Mr. Martin.  $\frac{1}{2}$  mi. beyond Bath Spgs. at  
 5 mi. past turn to left.



Col. Smith.

847 *Anisophyllum Agassiz*

*Nucleospira concentrica*

*Rhynchospira formosa*

Bath Spgs.

848 *Anisoph. Agassiz*

*Apicystites Anna*

*Spirifer Saffordi*

*Nucleosp. concentrica*

*Rhynchospira globosa*

*Rhynchospira formosa*

817. Nearly 4 miles from river at Clifton caps ridge overlooking Eagle Creek.

Siliceous group mostly concealed, 53 ft.

Black shale (= Waverly here) 50 ft.

(34 ft thick shale, 8 ft fine grained ss with

*Singula subspatulata*, 8 ft massive ss)

Lower Helderberg 25 ft. gray crinoid l. fossils obscure at this point.

Meniscus l. sponge bearing bed 90 ft. light fossiliferous (Where measured.

Was this measured on Eagle creek?

Variegated bed (includes as good + Clinton) 96 feet.

Meniscus sponge bed probably measured 4 mi. E of Clifton, and Varieg. at Clifton.

835.

Lower Held. in valleys of Indian and Hardins creeks is generally wanting, locally in thin beds.

Low. Held. absent in upper part of valley of Buffalo but on map begins at Flat Woods and goes down to Linden.

Below hill at Linden.

Black shale

Linden. Lower Helderberg, graded with fossils.

842 On Buffalo River in Perry county, F. Fossil.

835 3 miles below Beardstown on Buffalo, Black shale. Bill Edwards.

Lower Helderberg 30 ft. loaded with fossils. Meniscus bed.

Two miles above mouth of Buffalo, by a local swell, it is exposed in a bluff. Lower Held. 50 ft.

Nearest place is Bakerville. Nearest landing is Cuba. Good stopping place.

2 1/2 miles, not far from Dudley's Ferry. Dr. Williams.

Mapped from edge of Hickman to Montgomery's mill on Duck river, but not in Humphreys on Duck river. However it states in text; — Lower Held. along valley of Duck river scarcely reaches Hickman Co.

Decatur Co.

831 In the southern part of Benton, well developed at a number of points. L. Held.

840. Tributary of Birdsong, in southern part of Benton Co.

836. Low. Held. Commencing at mouth of Big Sandy and extending up valley 5 or 6 mi.

839. Williams Mill, about 5 mi. above mouth. Orange sand + gravel.

Lower angular cherty masses, fossils. few layers gray limestone. Black cherty limestone. 50 feet.



Quarry, Taylor's Quarry,  
About 1 1/2 mile east of Iron City,  
on the north side of the Railroad to  
Columbia.

Heavy well bedded wavy with large long leaves  
5 1/2 ft thin bedded wavy shaly at Cedar Pt

3 inches broad

Phosphatic nodules

10 inches greenish shale like wavy base  
at Mt Pleasant.

6 in. genuine fissile Chattanooga  
black shale.

15 in. layer of greenish fine grained rock  
= equivalent of Hardin sandstone.

6 in. shaly rock, weathered to deep brown,  
also belonging to Hardin sandstone.  
Unconformity distinctly seen at  
quarry. on Silurian.

Rock in massive layers, 13-18 inches  
thick. About 10 feet exposed here.  
Rock contained 6-8 specimens of  
*Pizocrinus gemmiformis* and  
1 large *Orthoceras*.

At first crossing of road near  
Railroad, about 1/2 mile east  
of Iron City, the total  
thickness of the Silurian  
is 55 feet.

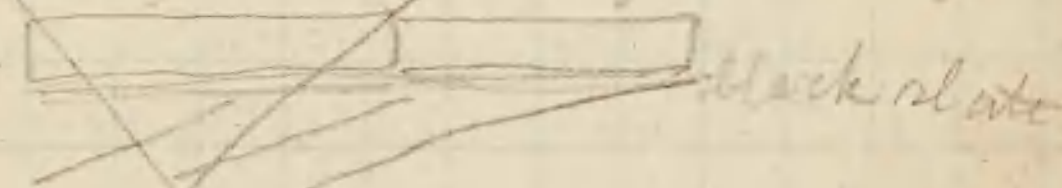
At base is 1 foot of coarse  
conglomerate. Pebbles =

1-3 inches. Rests upon a  
bluish fine grained limestone  
in thin shaly beds.

Quarry 1 mi. N of Iron City, on west  
side of R.R. to Columbia.

A 15 inch layer of greenish fine grained  
rock

B 6 inch, brown, shaly rock, weathering black.  
Unconformity here, distinctly seen at quarry.



Top of Silurian

C Rock massive with *Pizocrinus gemmiformis*  
plus small large *Orthoceras* (?) many of  
them *Pizocrinus* but not in any form.  
Rock in beds 13-18 in thick.

At north end of quarry layer is seen to  
be Chattanooga black shale - 6 inches.

Wavy like rock

16 in brown ledge = Hardin? 33. Wavy?

9 in. brown scarcely shaly rock like above.

19 ft. This is the quarry stone of last section.

1 1/2 ft. Day shale

5 inches limestone.

1 ft. clay

Waldron?

23 ft. more solid limestone layers, white  
except within 3 feet of base where it  
is often red.

3 ft. Asymmetrical layers limestone, soft.

3 1/2 inches cherty rock.

2 ft 8 inches crossbedded ferruginous rock.  
Soft clay in rock massive.



As good as clay, rock.  
3 in. to 12 in. Chert in chert (Perrin's form)  
2 ft 6 in ferruginous limestone.

6 in 1 hard limed fossiliferous chert.  
7 in Plectambonites

Softer bluish clay rock, nearly clay.  
corresponding to clay rock at Mammie's  
5 ft from creek level in the same direction.  
Chert in ferruginous, globular  
mass 3 inches in diameter.

Pentamerella as at Perrin's

Diplon artus as at Clifton

Large otolith shell as at Clifton?

Strophomena Dwyerensis

3 in pecten only ends

~~Strophomena species top of pecten I saw  
as at Perrin's, the shell is white, bryozoan.~~  
Horseshoe bryozoan.

Let base of cliff north of Cedar Pt. along  
the railroad.

Spindle large, Dwyerensis, nothing in  
section corresponding. D. & C. commonly  
seen from some species of limestone for the  
Dwyerensis.

### Waldron

Hyalolithes like Newson.

Rhynchospira and other species

not yet identified in the section.

crinoids.

Top of Waldron. Well bedded limestone.

Dinorthis subquadrata

Rhynchospira murrayi

Strophomena planumbona

Strophomena planumbona

Mammie clay.

Rhynchospira murrayi

Callipora

Platystrophia

quadrangularis

? Waldron bed?

Dinorthis murrayi small

Dinorthis reticulata coarse

Plectambonites small as at Perrin's?

Strophomena gemmiformis?

Dinorthis disparilis small

Spirifer Endora

Rhynchospira, very large

Dinorthis elegantula

Strophomena planumbona large

Dinorthis

above Waldron bed in north of Abilene

Strophomena

Dinorthis gemmiformis.

Plectambonites pentagonal form?



Friday PM 10 Train at Dayton.

Saturday M<sup>11</sup> Iron City, to Taylor's Quarry.

Sunday 12 Iron City to Cedar Point.

Monday 13 Iron City. At depot exp. to Waterloo.

Tuesday 14 Waterloo, Brush & Bluff Cr. to Riverton.

Wednesday 15 Riverton to Pickwick. E bluff.

Thursday 16 Pickwick. E + W. bluff.

Friday 17 Pyburn Top LH, Calybeate Spgs.

Saturday 18, Savannah, Col. Smith.

Sunday 19 Savannah

Monday 20. Savannah, Bath Spgs. Swallow Bluff

Tuesday 21, Swallow Bluff.

Wednesday 22. Swallow Bluff, Clifton, Legr.

Thursday 23 Legr. New Era. <sup>Shields</sup>

Friday 24 New Era, Kelley, Bakerville, <sup>trucks</sup>

Saturday 25 Bakerville,

Sunday 26 Bakerville, Cuba, Steamer

Monday 27, Danville to Cumberland City. 5 L

Tuesday 28 In bed. Cumberland City. B D S L

Wednesday 29 Sat around hotel Cumberland City. B D S L

Thursday 30 Collected Cumberland City. Home B D S

Friday 31 Cincinnati

Pyburn bluff opposite Pickwick.  
x. Bluff creek.

1. Most southern bluff. < Short Hollow

a. Anderson branch

b. Johnson branch.

2. Middle bluff

c. Boyer branch.

3. Pyburn bluff proper.

Harris Leeth. Pickwick. Tenn.

eastern

1. At most southern end of bluff, next to Bluff creek. At base of section =

A-11 ft. river to top of first set of hard rock. Very fine grained limestone with much chert. One good cross section of Camaroceras at top. Camaroceras at all levels. Collected.

B- 23 feet Camaroceras very good at top.

C - 16 1/2 ft. In middle see next page

B+C + 19 ft to heavy fossiliferous cherty bed 1 ft thick.

B+C + 50 1/2 feet to black shale horizon.

20 in / sandy shaly rock = 4 in. at bottom hard.

(4 in soft. 12 in sandy shaly rock.

large Dalmanites, pygidium near top fossils, thin streaked throughout this section.

17 1/2 ft below top is higher cherty layer with plenty of







John Henry Johnson, 7 miles east  
of Savannah, Brownpoint bed  
fully exposed with *Pisocrinus*  
*pentagonal form*, etc.

Col. Jim Smith, 9 mi. E of Savannah.  
Slope in front of house between  
house + road + along road = Brown-  
point bed. Across Poone Creek S.  
of road  $\frac{1}{2}$  mi. exposure shows  
more solid limestone above  
the clay, fossiliferous beds.  
Above is sand + gravel. No  
Black shale or Waverly left  
along road so far east  
except *Orthis* + *Tertiary*  
erosion. Belongs to John Bodwin  
now. Col Smith's place.

Hagler Mill is on Buffalo river,  
Bluff on east side, about 75 ft high,  
cross river at the mill = ford. About  
a mile and a half below Bakerville,  
about 5 miles from Bakerville to  
mouth of Buffalo.

Ledbetter Landing, 8 miles  
from Holladay.

Mr. Rise at Ledbetter has a store.  
Die wagners coming in all the time  
here from Holladay. Can stay  
over night with Mr. Rise.  
Can stay with W. F. Harrison  
at Holladay, good place.

W. F. Kuehn, 1129 - 5th St N.  
90 is war department. Met his  
brother Gustav Kuehn.

Clive Hill, at Frank Roberson on  
4 mi. West of Clive Hill, near Pine  
Grave Church, down hill E in  
a branch.

Grave yard Hollan,  $\frac{1}{2}$  mi. E of Ro-  
berson. M.D.  
S. C. Morris. Savannah.

### Fossils

Base of *Camariocrinus* section at  
Calycate Springs.

*Dalmanella subcristata*  
*Rhipidomella* 2 or 3 species  
*Glyptana rhomboidalis*  
*Strophomena punctulifera*  
*Spinifer* or *Deltys*  
*Bilobites*  
*Favosites*



Fossils

Col. Jim Smith, 7 mi E of Savannah.

Diaphorostoma micragarum.  
 Diptyonella  
 Meristina maria roemerii  
 Merista tenuescens, common.  
 Trematospira  
 Homospira schucherti.  
 Homospira  
 Nucleospira concentrica.  
 Spirifer crispus?  
 Atropa reticulata newmexensis.  
 Urocamulus Stricklandi, smaller than typical.  
 Urocamulus tennesseensis.  
 Wilburia affinis  
 Camartocchia like neglecta  
 Camartocchia acuminata?  
 Syphidula roemerii  
 Oithothetes subplanus  
 Dalmanella elegantula small.  
 Rhynchonella  
 Callispira elegantula.

40

E of Savannah 8 mi E of Savannah.

Cyathophylloids radiata.  
 Amplesis shannoni.  
 Favosites  
 Plasmopora folia  
 Thecia, Artylomacra verrucosa.

49

E of George Wilcox 7 1/2 mi E of Savannah.

34

Homospira?  
 Anoplodonta?  
 Nucleospira concentrica  
 Nucleospira planiformis?  
 Merista tenuescens  
 Atropa reticulata newmexensis.  
 Wilburia affinis  
 Syphidula roemerii  
 Syphidula longicauda?  
 Strophomenella parvifolia  
 Gephieria subquadrata  
 Dalmanella elegantula typical!!  
 Rhynchonella  
 Rhynchonella affinis  
 Leptocoeloceras planiformis.  
 Artylomacra verrucosa.

In pocket of John Henry Johnson.  
 7 mi E of Savannah.

38

Trematospira? very small  
 Spirifer affinis?  
 Camartocchia like neglecta  
 Rhynchonella  
 Proteridius multigaris.



Photo 2. Coffee sand, just below  
Coffee Landing. Term, B. section  
well shown at bluff, Bluff about  
1/2 mile long.

Black bluff begins at Cravers and  
extends down the river. 10-15 feet of  
Barnumford bed in 15-20 feet of  
Dixon bed. Dip up the river.

At Carr & Vids Bluff Landing,  
off the river, rounded limestone bedded.  
Above this is Dixon bed - more clayey  
streaked with red, 12-15 ft.  
Above is Barnumford bed, massive  
blue for 5 ft. Thin bedded & white  
clayey above, 20 ft. dipping  
down the river.

A short distance down the river the  
dip is up the river. Apparently  
a tilted limestone.

Further down river the Dixon bed  
again is nearly level the dip  
slows down river. A tilted bed  
of white & red alternating, ~~the~~ 20 ft.  
overlain by 32-40 ft of Barnumford  
bed dip continues down stream.  
Overlain by clay looking stuff. Look  
up to see if long bedded. May be  
this the dip - not too many  
thin limestone - cherty. Some thin  
beds of limestone appear.

Bluff begins about 1/2 mi above Sallie  
Hard layers 8 ft. over 5 ft more  
clayey with a little red, over 15 feet  
chiefly hard. All is Glenbrook bed

1/2 mi. below Sallie. Glenbrook bed,  
at first level then dipping down stream.  
Overlain by Dixon bed dipping  
strongly down stream. This Dixon  
bed is thicker than bedded. A considerable  
part consists of a fine grained solid  
ly limestone interbedded with some  
clayey reddish streaked. Pleasant  
Bluff & Pleasant 1/2 mi. up stream 20 ft. Blankin. overlain by  
base of Dixon bed. Then dips down  
Black rock. is that a dip at S. over  
ment light, just at the Kelley Land-  
ing.

At Kelley Landing & below  
a great thickness of Blankin  
with dipping up stream. Resting  
on Sallie the limestone is not  
worthwhile exposure. 10-15 feet of Sallie  
limestone exposed.

Just above Swallow Bluff the rock  
dips down stream, the Blankin  
resting on the Sallie limestone.  
The limestone is ~~thin~~ down →  
The thin bedded Blankin 30 ft  
is overlain by heavy bedded 15 ft



Below Grand View. I side about  
 Rocks dip up stream  
 Glenkiln bed. Limestone above more  
 the interbedded below.  
 Level of limestone is partly exposed  
 about 10-15 feet at highest point of  
 arch. The nature of the limestone  
 not to be determined at distance  
 at equal. Usually 3 ft clay in  
 15 ft thin bedded limestone. Not  
 much more than thin bedded limestone  
 may be exposed. No more exposed  
 any level exposed at top of  
 arch although partly exposed.  
 Further down the town is there  
 bedded stuff still down the road.  
 Is it in ?? There is strong dip  
 up stream Glenkiln bed. Limestone  
 bed over this bedded section.

About 1 mile into Glenkiln road  
 Take left hand up a little place  
 down a little place, about 200 yds  
 on the bank to a big gate on left  
 down 150 yds big place over the  
 spring. House in far side of gate  
 on left side of road.

State keep fence on left all way  
 to waste in stone. By way to the  
 stone.  
 about 1/4 mile to stone.

W. N. D. Am. house. Sp. S. Exp. N.  
 From Bath Springs up to gate at  
 top of road at road 37 ft.  
 19 feet largely reddish clay stuff  
 (= total of 56 ft) several thin  
 limestone layers above level of shade  
 18 1/2 feet no exposure along road.  
 (= total of 74 1/2 ft. up to certain  
 Bannock bed.)  
 14 feet up to a hard layer in  
 soft white clay rocks 88 1/2 ft.  
 C 22 feet of Bannock soft white  
 clay stuff (= total of 110 1/2 ft.)  
 B Hard limestone 5 1/2 ft thick  
 (= total of 116 ft)  
 A 19 feet to top of which is highest exposure  
 (= total of 135 ft. 21 ft to top of hill = 156 ft)

Collected with T. C. Horton.  
 Glenkiln, Dord.

- E. 19 feet at top. 5' thickness. The thin interbedded. The small Phylloporina  
 will be common at Glenkiln. The  
 Wagners with raised ridges in center  
 of each.
- D 7 1/2 ft Hard limestone
- C 22 feet limestone. Fossils collected  
 = Haddley of Safford
- B 4 ft Hard limestone = 3 feet clay  
 of Safford
- A 17 ft. Wagners near base. Conglomerate  
 = new top. collected  
 = Wagners bed



# Swallow Bluff.

N. end of fold.

Osgood massive.

C 6" Chert of Clinton

318" Limestone of Clinton

a Salter limestone = Near middle of arch = 31 feet thick. Dense hard limestone beds 2-4 inches, more shale than limestone.

but abundant

folded far further up river. Not Dixon streaks at different level, probably

F 5 1/4 ft rock after weathering back, with reddish = 9 1/2 ft thin bedded limestone.

D 8 1/2 Osgood base, hard massive ledge, vertical.

G. 6 ft white cracked limestone a rather thin beds.

H. 11 ft limestone with reddish crinoidal specks, rather thin bedded.

I 11 ft. A considerable part of it is massive bedded.

(Total 53 1/4 ft.)

J Waldron bed. 3 1/2 in fossiliferous soft bed at base, 1/6 in very fossiliferous but hard limestone bed on the top or washed as to be not readily recognizable, 20 inches, reddish clayey stuff. weathering back.

K 21 ft solid limestone, cracked (Total 76 3/4 feet)

L Slates, rose, which raise the land to 79 ft at least.

## Fossils.

Larger C. Bath. Spgs.

Merista tennesseensis common.

Atrypa reticularis newmarchensis

Wilmetia saffordi.

Syringidula rogersi.

Murchisonia tennesseensis

Camartoechia like reflecta but larger etc.

Hemiphragma schucherti.

Dalmanella elegantula

Nucleospira concentrica

Leptaena rhomboidalis.

Calymene Mayanense

Pentamerites, more than slope than typical

Favosites forbesi.

Orthothetes subplanus

Callipora elegantula

Stenostegites, one.

Diaphanostoma Mayanense

Rhipidomella saffordi.

Amphitheca.

Rhipidomella.

Spurifer saffordi of Safford. look up.

Camartoechia acinus

Spruce look up.

Amisophylus Agassizi look up.

Clinton Swallow Bluff

Stellaster more like Modiolaster than

Calymene vogeleri, Leptaena rhomboidalis

Dalmanella elegantula Atrypa marginalis



Fossils

Bath Springs Layer A

*Caryoceras ornatus*

Cup shaped spurge craters

*vermiculum*

*stellatum - sulcatum*

*Agathespira monensis*

*Prospira communis*

*Stenoceras labella*

*Pentamerites typica*

*Atrypa marginata*

Waldron bed.

Montgomery's Mill

Centerville

Near Fly

Iron City. Clinton County. Argood nearly gone.  $\uparrow$  up  $29^{\circ}$

Riverside, Clinton County. nearly gone  $\uparrow$  up  $46^{\circ}$

Swallow Bluff. Clinton County. nearly gone  $\uparrow$  up  $53^{\circ}$

Clifton

Glendon



# St. Vincent

Below bridge it is thin, & after the bridge  
 down the hill, the limestone is  
 better exposed, but light in color. The limestone  
 is not very massive, in any of  
 the layers. It is mostly thin, & of  
 not very great thickness. The layers  
 are not thin here. There is no  
 question of the absence of limestone  
 in any part here. App. about 8 feet of  
 the brown and limestone, then in  
 app. 2 miles, in water, and up the hill  
 is a layer of limestone 2 miles?  
 I was up above the bridge, and the hill is  
 up the hill. The hill is up the hill.  
 The hill is up the hill. The hill is up the hill.

Leg 86 SE 413 yds. NW 400 yds.  
 E 3/4 mile,



## St. Vincent

50 feet above are soft weathering clayey  
 limestone with cherty nodules & sponges.  
 75° 15 feet. About 25 feet at base are harder  
 12° white clay base of Brown sandstone  
 42 1/2 ft. thick. 42 1/2 ft. = 88 1/2 ft. above Walden  
 From here in red at least 2 yards white  
 14 1/2° { 14 1/2° Total = 14 1/2 ft.  
 Other red clay bands at 3°, 7°, 10 1/2°, 12 1/2°,  
 5 feet red clay band.  
 31 1/2 feet of crumbled limestone  
 Walden bed

Monitors at top of 75 ft section  
 are found above.  
 Above is 22 feet, hard limestone, & be-  
 comes soft clay & sand above. The top  
 is not very hard, but is not. Craystone  
 is not. Total Brown sandstone =  
 78 1/2 ft. 102 ft. in some  
 places.

= About 1/2 mile up river above  
 cement mill.

Dip 7 1/2° in 100 yds.  
 16 ft solid red rock, limestone, & sandstone.  
 Not exposed for 100 yds. down stream.  
 70 yds down stream.

*[Faint, illegible text in blue ink]*



Legs

Short Creek, W.E. Ashley  
P. D. Brown. Above.  
300 yds.

3 ft 4 in. of black shaly stuff  
and hard rock alternating  
in layers, full of thin fossils.

5 in shaly

6 in shaly

4 in shaly

6 in shaly

19 in shaly

6 ft. Hard ss.

At Top the underlying Shale and  
limestone  
3 ft. shaly

Lower shaly 43 feet

below Hard ss.

Shale limestone 59 feet

below Hard ss.

SE of Kelley's Landing, on north  
side of creek N of Bee Creek.

red clayey argill.  
thin asat chert in white coarse

17 ft. Richmond  
50 ft + 50 ft +

New Era

upper 13 feet

at top - massive - argill. - fossiliferous

41 ft. Brownish bed exposed. Shale and

2 ft. white clay fossiliferous

37 ft. Diox bed. 69 ft above Wadsworth

sparsely exposed

10 ft. white limestone & reddish limestone

22 ft. white limestone

Wadsworth bed.

31 ft. reddish limestone rather thin  
5 ft. white limestone thin

Wadsworth bed 3 1/2 ft. 9 in. limestone in middle

27 ft. rather hard reddish limestone

3 ft. white & white limestone in middle?

6 1/2 ft. rather soft & reddish limestone?

20 ft. fine white limestone 56 1/2 ft. limestone

continued for down 12 feet at least

more dense & white for 8 ft above

12 ft. Lower Sil. - Ordov. limestone coarse

fragmental at top made up of

limestone & chert, common in middle. Color

reddish - large coarse bryozoan plates

weathering to brown. Fossils

2 ft. coarse limestone common in middle

sparsely fossiliferous to be above Richmond

Saltillo limestone

No rock recognizable in chert



Fine exposure below W. met. oil. Great vertical cliff to Brownport.

Parker's Landing. Below landing is reddish limestone.

Take left hand at Blacksmith shop, go 2 miles to spring on R hand side, near a school house among trees, cross creek, go along a lane, fence on right, intersects main road about 200 yds from school house.

Turn to right, go on half a mile road forks, turn left here. About 3 miles to Baker'sville.

### Big Sandy.

On east side of Tennessee opposite mouth of Big Sandy is Standing Rock creek. At forks of creek 5 mi. from Tennessee river is exposure.

Fossils there on both sides of both creeks are fossils. Black slate.

2 ft Black shale? 5 1/2 ft reddish creamy  
5 ft reddish subphosphatic shale  
4 ft Black shale.  
5 1/2 ft coarse earthy.  
3 ft Coniferous?

10 feet?

43 ft top of cherty limestone to base of same at river edge. Camden chert.

Clinton Burcham, about 4 mi. N. of Baker'sville, on road to Waverly.

Enter gate and turn east along edge of hill to Henry McChes's house.

Exposure of Coniferous is at beginning of bluff beyond the house, on west face of hill, at west end of bluff.

The Camden chert along river face of bluff. The Coniferous seems to occur only at western end = beginning of bluff. Below Buffalo river level to 50 ft above at highest elevation.

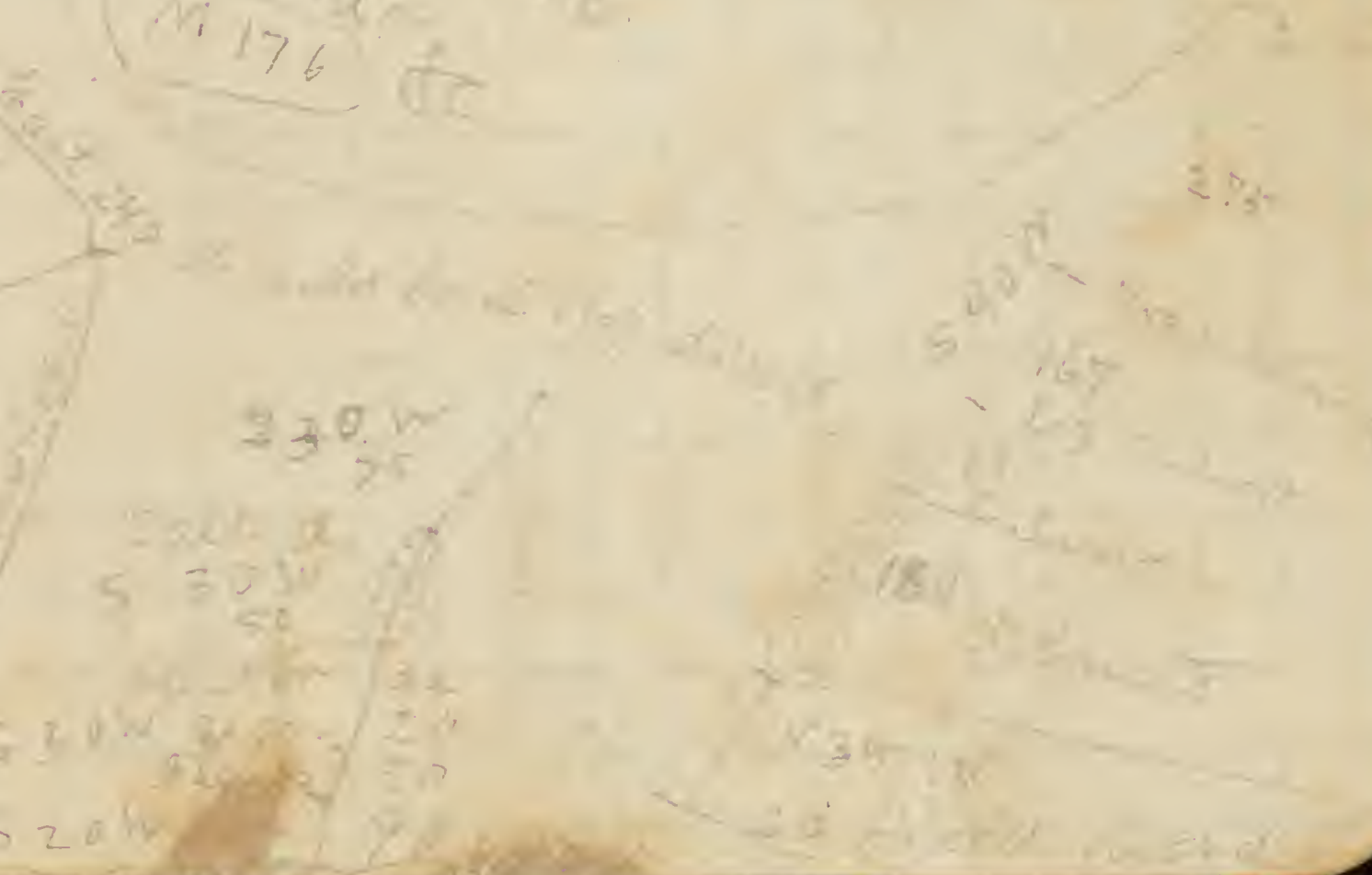
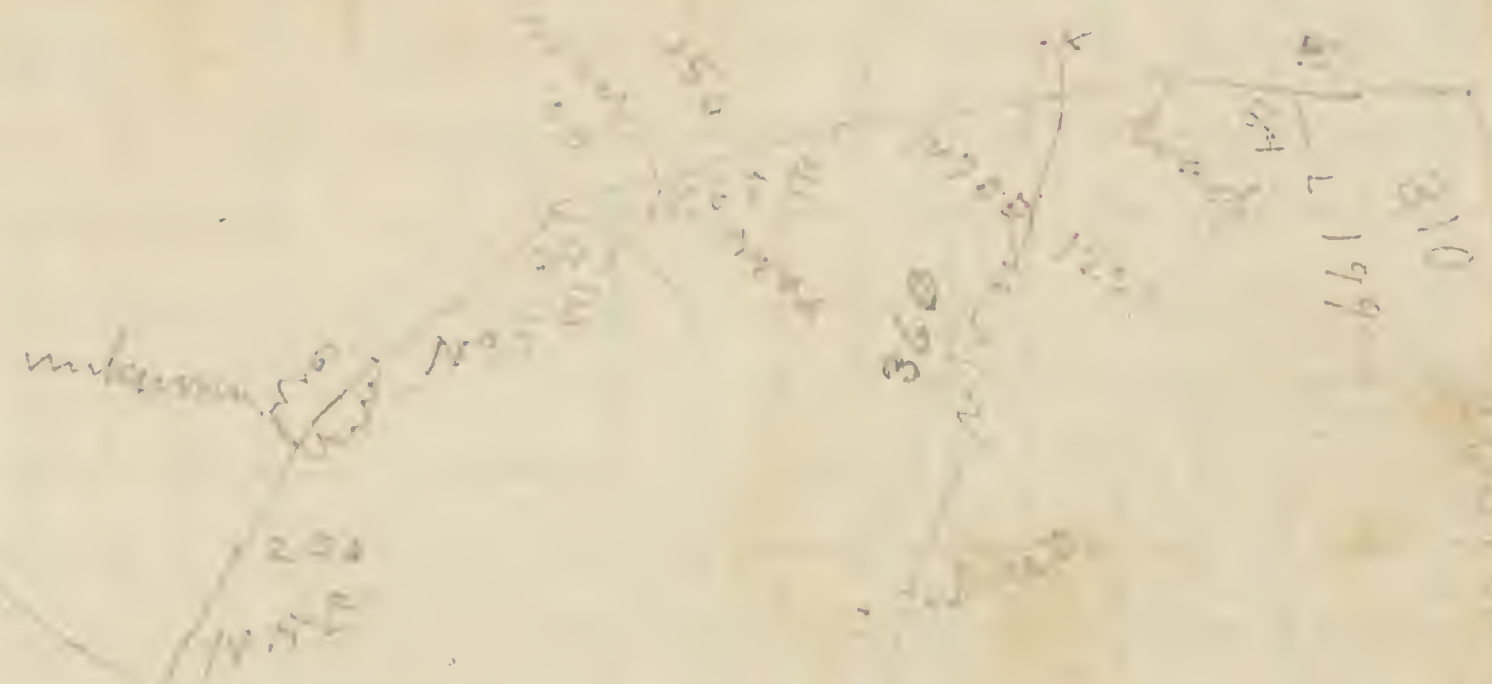
The Bluff is at the Wharf on the Buffalo river.



Sam Dix m.  
 Curlew Island  
 Photo

Robert  
 Steele

1 knot  
 1 knot  
 1 knot





Bledare

Peabody

Centerville Mt. Gregory

Fly.

Princeton

Bakerstown

North Star Glean

Clinton Clinton

Swanton Bluff Bath 548.

Pylorus Bluff

Adair Bluff 3000 City

Box 37 1/2

14 1/2

Leaf 32 3 1/2

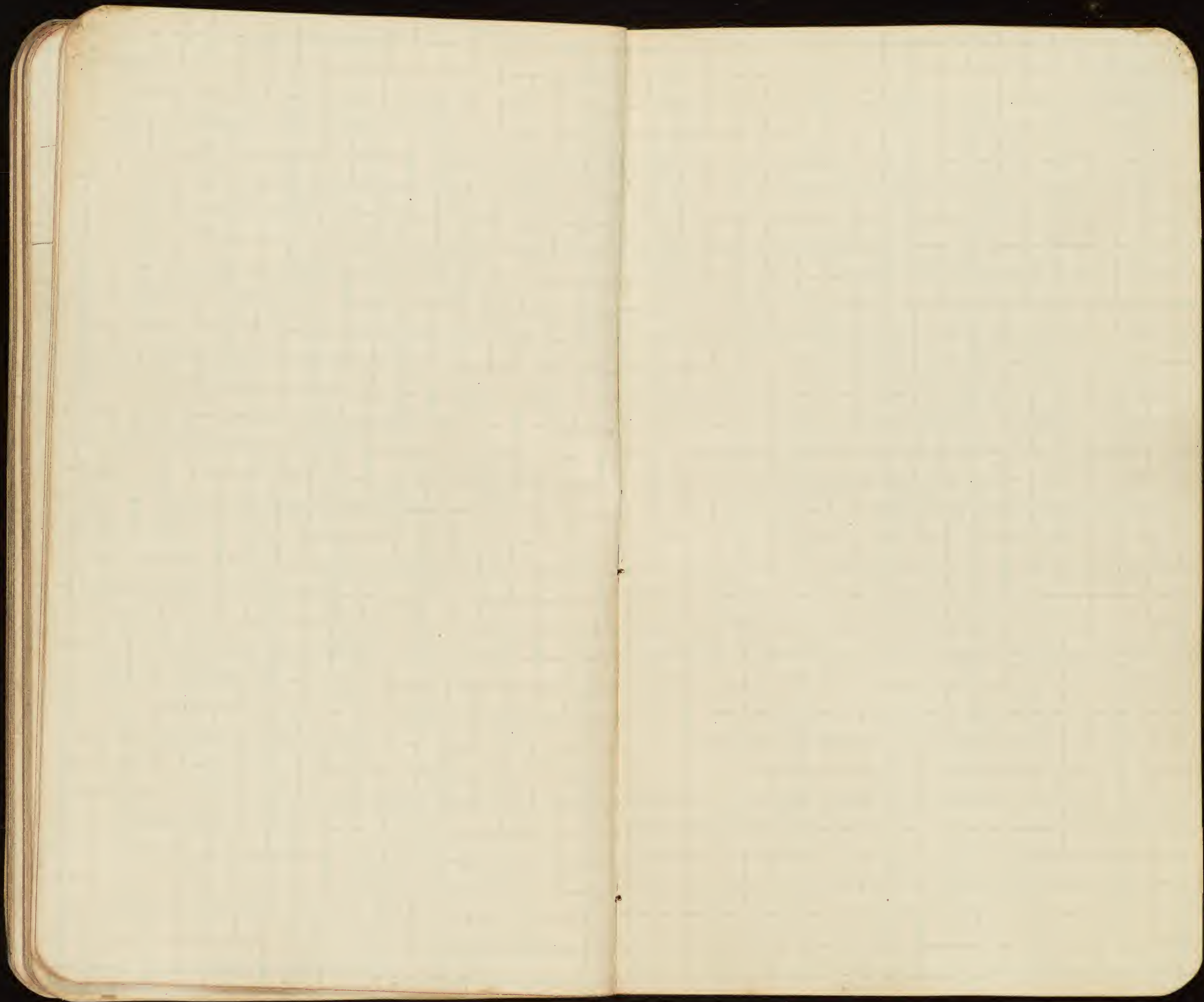
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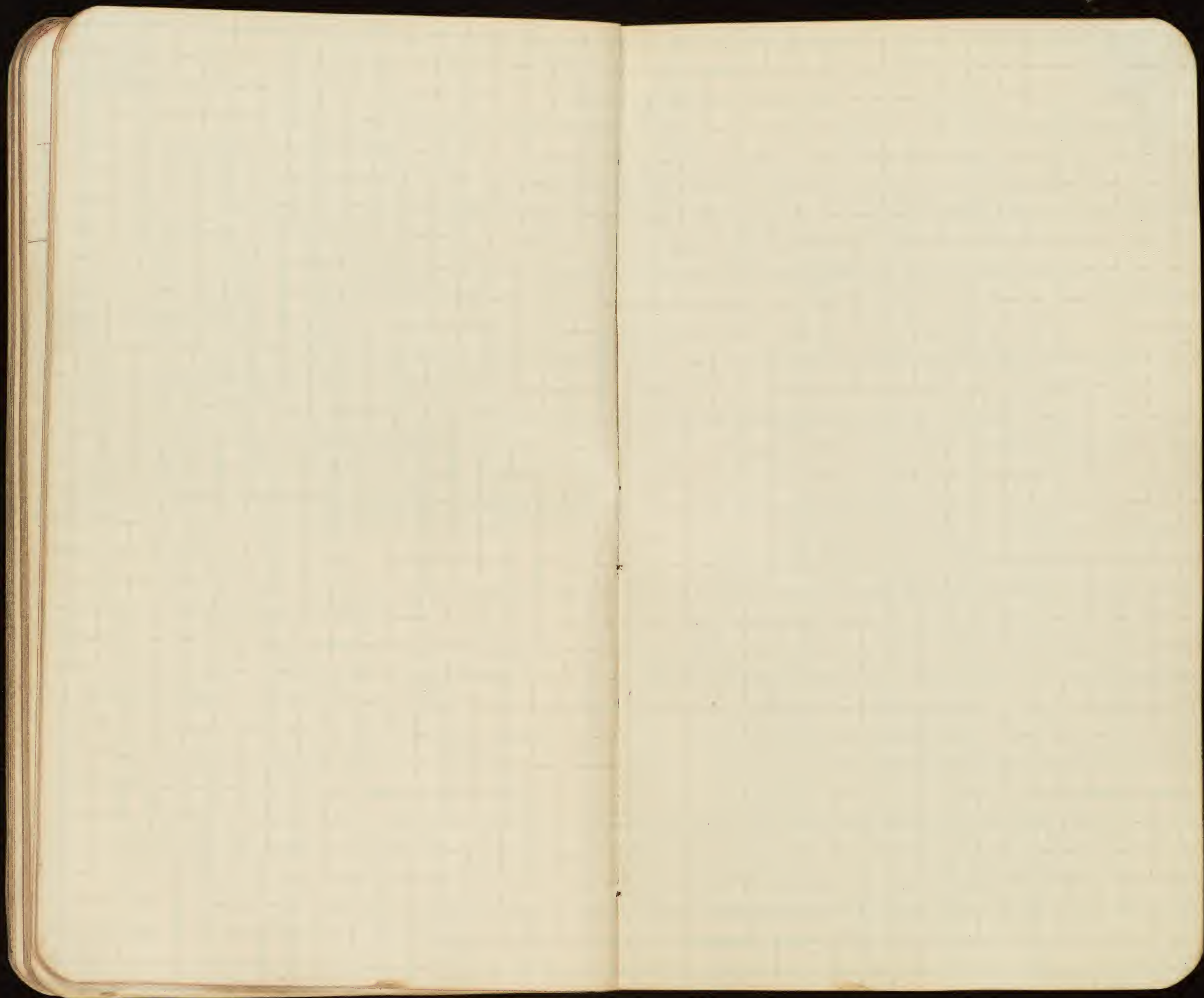
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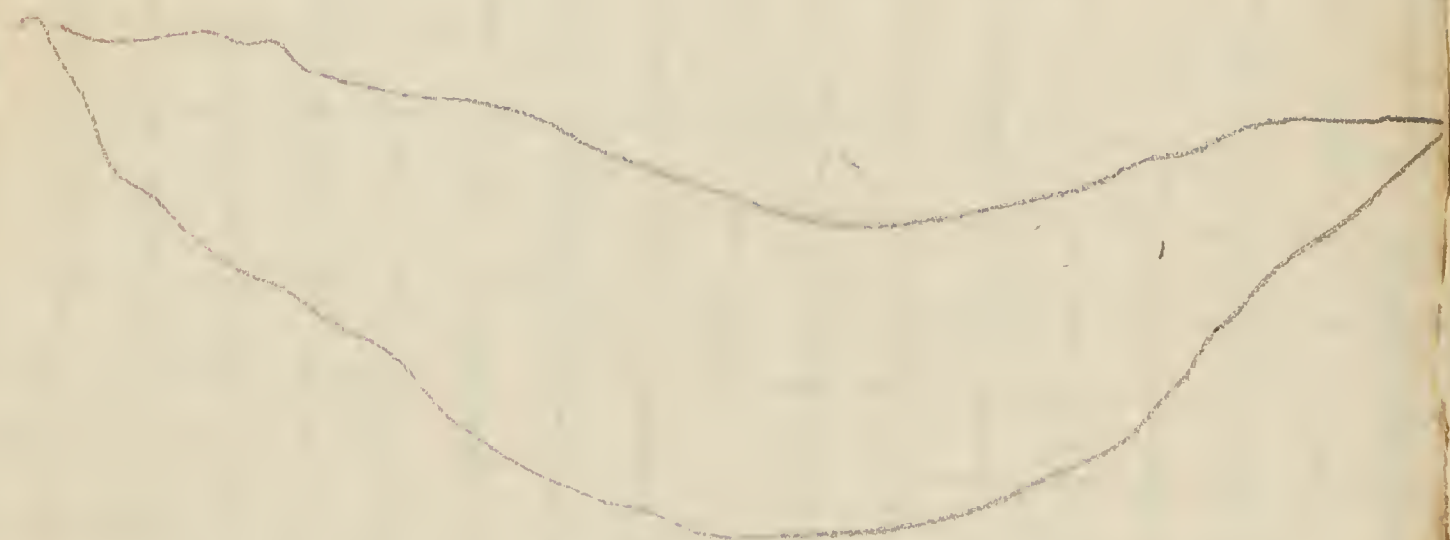




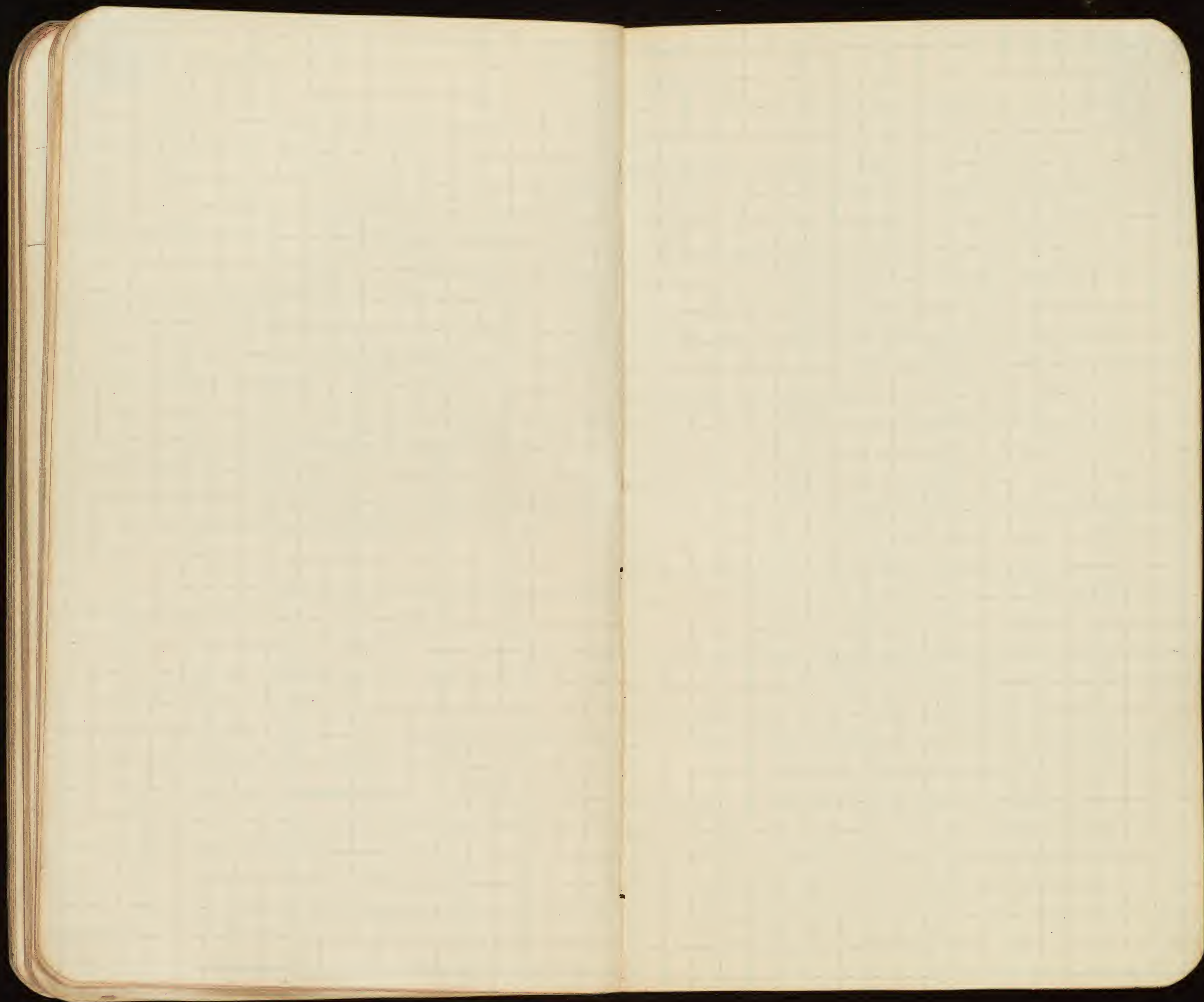




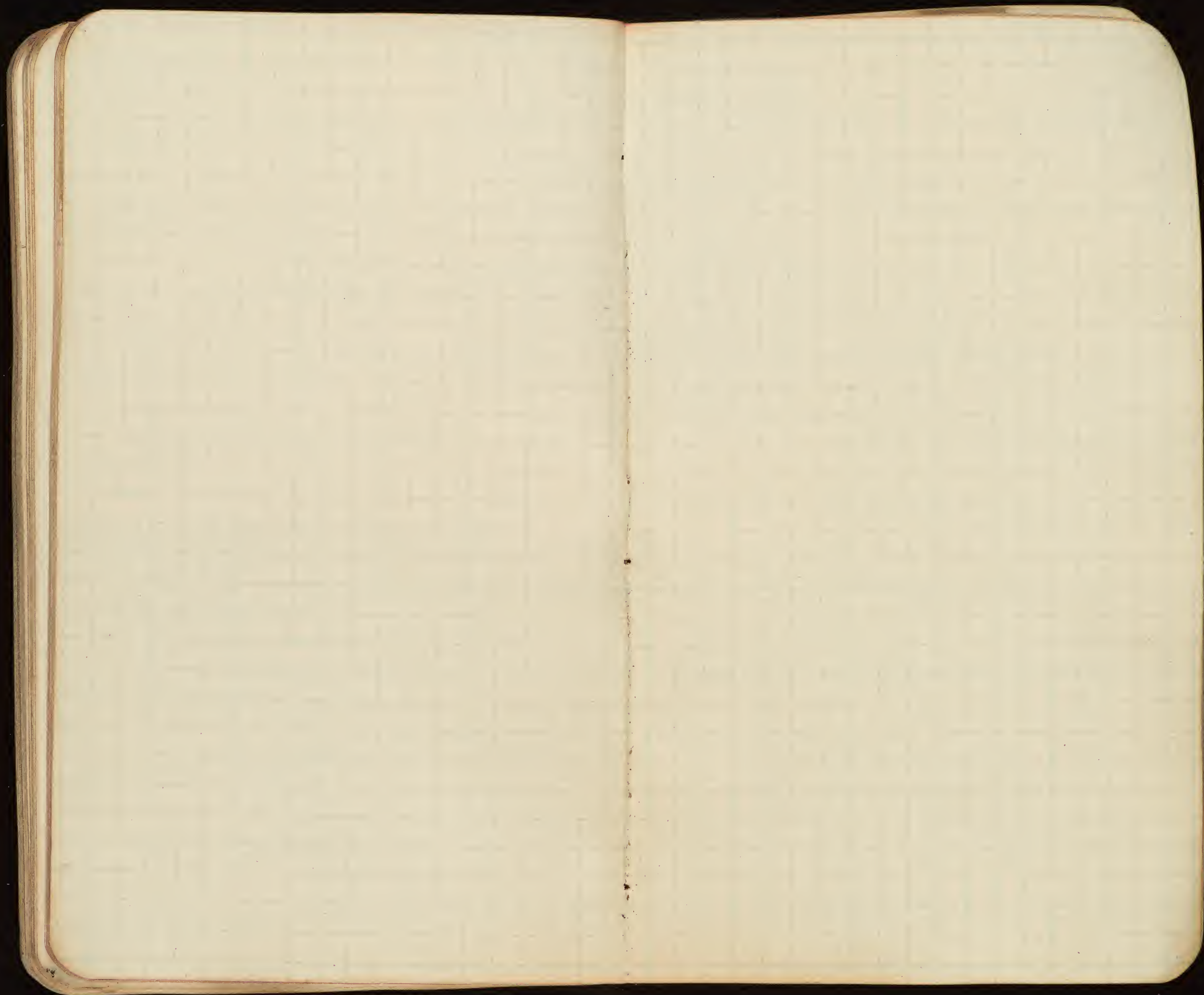














S 12 W 25

S 15 W 215 Whistle N 75 W to end of house

S 15 W 160 Beginning of Knox str. with

S 15 W 72 (M 177 L 200 B.C. 86)

S 15 W 40 End of Knox str. with  
house is N 40 W.



N 60 E 80  
N 40 E 50  
N 20 W 400 G out house on left.  
N 170 Lane turns off here  
Lane = N 60 E 50  
N 20 E 120  
N 60 E 100 Neg hut on Right  
N 60 E 200  
N 10 E 80 Home to N  
W 50 Lane continues  
west to hill 300, hill front  
runs N + S forming vally.  
Field Lane, S 20 E 70 Stable R  
S 80 end of stables,  
E 250 corner of exp. hill  
(N 75 E 150  
N 60 E 80  
N 40 E 95  
N 80 E 65  
S 70 E 50  
E 100 Photo 11. Preside. hill  
S 85 E 160 Neg hut to end of G out  
N 80 E 66 river, place.  
River runs N 40 E 220 path on left  
neg hut on left  
N 80 E 100 river bluff  
N 50 E 140 end of river bluff.  
(regular road crosses river to NW  
N 40 E 40 to regular road  
Regular road  
N 40 E 75 school on left.

3) S 45 W 55  
N 60 E 150  
S 85 E 180 Church N = B  
hardly 2 1/2 mi.  
S 75 E 120  
E 212 Road goes up stream  
(N 45 E to bluff where road turns off  
(N 45 E 55 = to river.)  
S 40 E 244 to river,  
N 80 E 100 to T

G out & Gate  
N 30 W 80  
N 30 E 216  
N 40 E 140  
N 65 E 190  
S 80 E 125  
N 55 E 15 river,  
N 55 E 25 across river,  
N 55 E 20  
N 60 E 70  
N 70 E 330  
N 25 E 140  
N 80 E 40 G out lot on church on left  
river on right  
N 60 E 175  
N 80 E 500 to U along river  
80 to corner of fence.  
From U bluff to G out N 20 W 58  
N 10 E 55

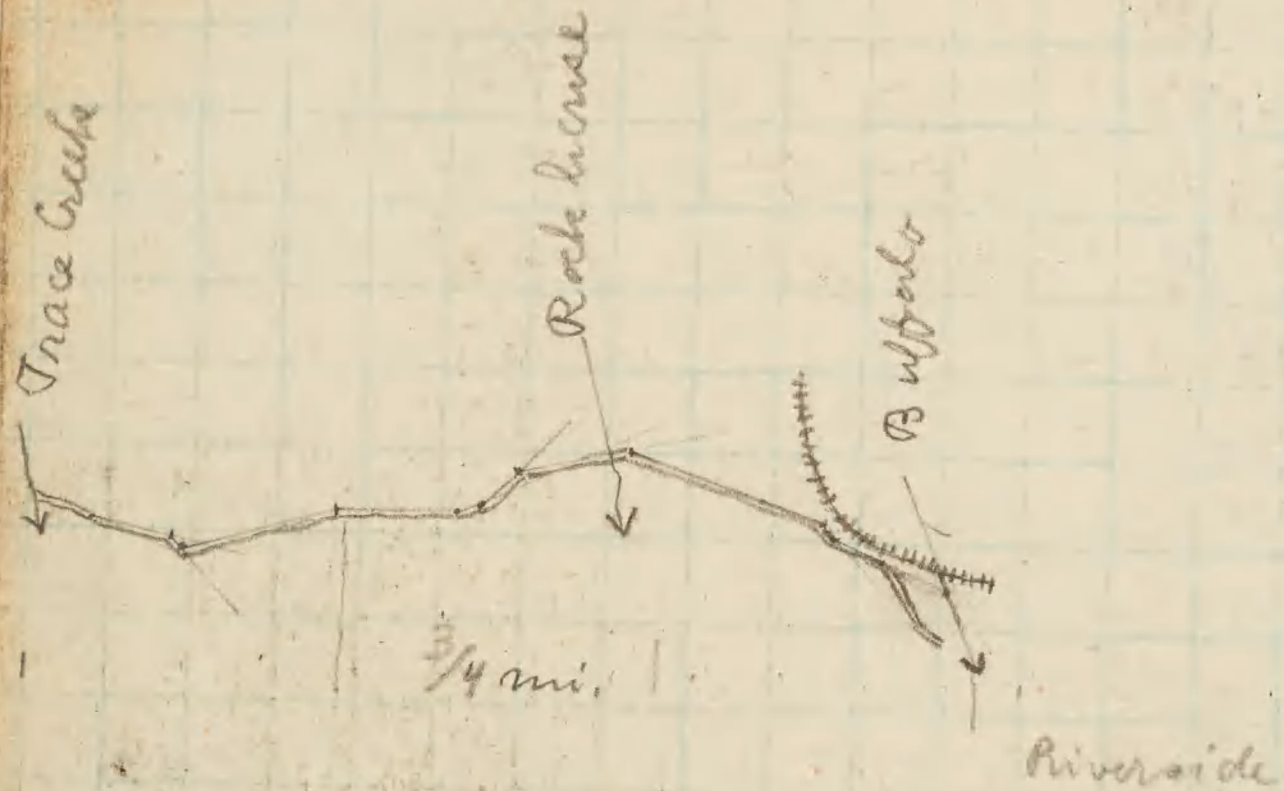


\* N 50 W 450 Along River, Left road  
 N 55 W 1180 Cross River to W,  
 N 5 E 180 to bluff, No path on  
 east side.  
 N 35 W 235 (Fence) Phillips,  
 across river at 190)  
 3 mi to Olive Hill.  
 \* S 70 W Leave river across fields 770  
 W path wagon 200  
 S 40 W 420 to Main road R.  
 N 10 W 225 Phillips house

4 mi R. Returns  
 S 10 E 90 Savannah  
 ridge road start off N 50 W,  
 S 10 E 25  
 S 60 E 200 Stream crosses N 60 E  
 S 60 E 30  
 S 50 E 270  
 S 80 E 200  
 S 20 E 200  
 S 10 E 120 House S 70 W  
 S 15 E 100 Stream N 10 E  
 S 75 E 200  
 S 75 E 240  
 S 5 W 100  
 3 mi S 50 E 130 House S 35 W  
 S 80 E 160  
 S 40 E 160 House S,  
 Gate  
 E 75

1) N 18 W 565 Brand, Mill Martin  
 N 60  
 N 10 W 520 1340 2680  
 N 80 450  
 2130  
 \* N 18 E 115 Gate Gants farm.  
 S 40 W (40-80 River) 220  
 S 25 W 312  
 W 44 River close left.  
 S 75 W 300  
 \* Bluff with uncertainty = S  
 N 85 W 800 Bluff close left of river  
 N 75 W (175 end of bluff) 450  
 N 40 W 460 Road off to right E  
 N 85 W 100  
 N 45 W 150  
 N 70 W 140 Hill on right E  
 S 65 W 180 SS replacing Black Shale  
 with fossiliferous 4 in long.  
 Not well preserved but structure  
 shown. (48) = 14 old No.  
 S 70 W 260 Bluff on right Coarse SS.  
 Variegated bed begins  
 S 65 W 265 Road turns off N 55 E up  
 hill.  
 N 65 W 100 Meyer hut on right  
 N 60 W 160 Road turns off left  
 across hill T  
 N 50 W 80  
 N 45 W 500 School on left of  
 house on right Church B  
 N 45 W 175 Road off S 80 E to  
 old house. A





S 70 E.	85 + 65 =	150	37
S 80 E		170	4
S 45 E		38	
N 70 E	278 + 54 =	332	80
E	145 + 97 =	242	60
N 60 E		67	16
N 45 E		100	25
N 80 E	22 1/2	17240	14 1/2
S 20 E	11	436	109 RR
S 40 E		40	
S 60 E		100	100

150 middle of lot  
N 20 E

35 1/2 section 2 mi. W. of Trace Cr.

25  
60 1/2  
248  
36

5 st = 13  
10 st = 26 ft  
6 st = 15.6 ft  
5.2 ft

78 39 13  
264 132 4.8

35280  
1780  
1560

11  
44



$$L^2 = 10 + 65 + \frac{13}{8} \frac{1}{2} = 31 \frac{1}{2} \text{ ft}$$

m. p. m. t. e.



- L. Geo. Wilson, boy wagon.
- L. Jim Brown
- L. Albert F. Wilson, school house
- L. Old Smith, off from the road

Fond du lac place,  
cross bridge wooden bridge  
and bridge the side with  
gates.

Trace Creek



Trace Creek



